

### **REMARKS**

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

#### **Request for Continued Prosecution:**

An RCE has been filed herewith, as noted above.

#### **Regarding the Status of the Claims:**

Claims 1, 5-23, 25, 30, 36-38, and 41-63 are now pending in the application. Claim 1 has been amended to incorporate features recited in previously pending claims 2, 17, and 41. Claims 2, 17, and 41 have now been canceled. Claims 3-4, 31, and 52 have also been canceled.

In addition to claim 1, claims 5, 15, 18-20, 30, 36-38, 42, 49, 50, and 53-54 are amended hereby. Claims 30 and 36 have been made dependent on claim 1, and other amendments have been made to change dependency.

A new independent claim 55, claims 56-62 dependent on claim 55, and a new claim 63 dependent on claim 1 have been added. No new matter has been introduced by the amendments or the new claims.

Claims 2-4, 16-17, are canceled hereby. Claims 16, 24, 26-29, 31-35, 39, and 40 were previously canceled. Applicant reserves the right to further prosecute the canceled claims in a continuing application.

#### **Regarding the Objection to Claim 50:**

The typographical error noted by the Examiner has been corrected.

#### **Regarding the Rejections Under 35 U.S.C. 112, Second Paragraph:**

Claims 49 and 50 have been rejected as indefinite in lacking proper antecedence for the recitations of "diaphragms". The rejections have been overcome by making these claims dependent on claim 46, instead of claim 48.

#### **References Applied in the Rejections:**

The following references have been cited by the Examiner in the prior art rejections of the currently pending claims:

<i>Behar et al. U.S. 5,169,029 (Behar)</i>	Viellard FR Patent (Translation)
<i>Hardman et al. U.S. 3,302,832 (Hardman)</i>	<i>Garbarino U.S. 3,232,585 (Garbarino)</i>
<i>Bush U.S. 4,273,260 (Bush)</i>	Gusmer U.S. 4,654,368 (Gusmer)
Brown U.S. 5,526,957 (Brown 957)	Freeman 5,918,909 (Freeman)

Brown U.S. 5,265,761 (Brown 761)	Hillinger et al. U.S. 6,558,059 (Hillinger)
Sperry U.S. 4,568,003 (Sperry)	De Graaf U.S. 6,383,572 (De Graaf)
<i>Bergner U.S. 4,854,482 (Bergner)</i>	
Sirek U.S. 4,974,752 (Sirek)	Venooker, U.S. 5,755,269 (Venooker)

The italicized documents are newly cited. The others were among the 15 references applied to the claims in the previous Office Action.

Regarding the Rejections Under 35 U.S.C. 102(b):

Claims 1-4, 11, 20, 41, 52 and 53:

These claims stand rejected as anticipated by Behar. Preliminarily, it is noted that this rejection is moot as to claims 2-4, 41, and 52 which have been canceled. As to claim 1, and its dependent claims 11, 20, and 53, this rejection is respectfully traversed.

Claim 1, as amended, is directed to a self-contained foam-dispensing device. The claim recites:

a casing configured to be hand held;

a mixing chamber;

wherein the casing includes a port adapted to receive a plurality of containers for foam-forming chemicals such that when the containers are in the port, the containers move with movement of the casing;

a flow generator located between the mixing chamber and the port including a pump mechanism for each of the chemicals to induce flow of chemicals from the containers toward the mixing chamber;

an electric motor for operating the pump mechanisms;

an actuator for the motor, the actuator having a first state engagable by a user in which the motor continuously operates and a second state during which the motor does not operate; and

a discharge nozzle coupled to the mixing chamber,

wherein the pump mechanism continuously induces flow of chemicals toward the mixing chamber when the motor operates, wherein the discharge nozzle and the mixing chamber are included in a single replaceable part,

and wherein the self contained dispensing device does not include external tubing.

Behar does not disclose a device that meets the terms of claim 1, nor would it be even remotely suitable for use as a foam dispenser as recited in claim 1. Behar is directed to a manually operated device for separately storing the constituents of perfumes or medications and for mixing and dispensing very small quantities of the resulting mixture (see Col. 1, lines 23-24, 28-29).

Behar explains that a drawback to prior art dispensers of the kind with which its is concerned arises when the quantities of the two components to be mixed are very different, e.g., where the ratio of the two components could exceed five-to-one, and notes that prior art dispensers cannot easily discharge the components in anything other than a one-to-one ratio (see Col. 1, lines 50-60). The Behar device is directed to solving that particular problem.

To accomplish its intended purpose, Behar provides a device including cartridges of the two components, and separate distributor pumps to provide fluid communication between the cartridges and a dispensing head. The distributors have preselected effective stroke distances. A compensating a lever positioned on an offset fulcrum provides the lever with unequal lever arms that distribute the forces exerted upon the pumps (See Col. 2, lines 1-16).

The device includes two grooves 6 at the top and a groove 6a at the bottom to accommodate the user's finger. The pumps are operated by finger pressure applied at the grooves (see Col. 3, lines 11-17).

From the foregoing description, it will be apparent that Behar fails to meet the terms of claim 1 in at least the following respects:

(a) as a finger-held device, its containers will be far too small to store the quantities of chemicals needed for creating useful quantities of foam, and therefore fails to show a port adapted to receive containers for foam-forming chemicals;

(b) it fails to disclose, teach, or suggest an electric motor for operating the pump mechanisms;

(c) since it fails to disclose, teach, or suggest an electric motor, it perforce fails to disclose, teach, or suggest an actuator for a motor having a first state engagable by a user in which the motor operates and a second state during which the motor does not operate;

(d) it fails to disclose, teach, or suggest a pump mechanism that continuously induces flow of chemicals toward the mixing chamber when the motor operates; and

(e) the discharge nozzle and the mixing chamber are not included in a single replaceable part.

For at least the foregoing reasons, it is respectfully submitted that the rejection should be withdrawn.

Claims 36 and 38:

These claims stand rejected as anticipated by Hardman. This rejection is moot as claim 36 as amended is now dependent on claim 30, which, as discussed below, has been made dependent on claim 1. Claim 38 is now directly dependent on claim 1. These claims are allowable for all the reasons stated above in connection with claim 1.

Regarding the Rejections Under 35 U.S.C. 103(a):

Claims 1, 2, 4, 8, 9, 15, 20, 25, 41, 52 and 53:

These claims have been rejected as being unpatentable over Bush in view of Bergner. This rejection is moot as to canceled claims 2, 4, 41, and 52. As to claim 1 and its dependent claims 8, 9, 20, 25, and 53, applicant respectfully traverses this rejection.

Like, Behar, Bush is directed to a device that allows dispensing *measured quantities* of fluent materials. Bush's dispensing nozzle may be in the form of an oral dosing nozzle for oral administration of a veterinary remedy, or in the form of a spot-on dispensing nozzle or lance of any conventional type (Col. 3, lines 1-6), or for dispensing different chemical substances, in dispensing veterinary remedies, pesticides, toxic substances, dosing materials, medicines, and the like (Col. 4, lines 60-63).

The device operates to dispense *fixed* quantities of the fluent materials for each operation. The fluent materials drawn from storage containers 114.1 and 116.1 (see Fig. 1) through separate resiliently compressible dispensing tubes 22.1 and 24.1 which extend through a housing 18.1 to a mixing chamber 106.1. The mixing chamber is connected to a needle 121.1 for injection of a veterinary remedy or to another outlet through a discharge tube 118.1.

In several of the illustrated embodiments, the dispensing device 10.1 is motor-operated. The fluent materials are delivered to mixing chamber 106.1 by a mechanism 26.1 located in compression zones 28.1 and 30.1 for collapsing, dispensing tubes 22.1 and 24.1 when located in the tube zone 20.1; and displacement means in the form of drive means 32.1 for rotatably displacing the collapsing means 26.1 to advance the compression zones 28.1 and 30.1 along compression paths to dispense fluent materials through the dispensing tubes 22.1 and 24.1.

The Examiner states that Bush does not disclose a device in which the containers move with the casing when attached to the port, or that the device includes no external tubing, and seeks to remedy these deficiencies by modification to provide these features based on the teachings of Bergner.

Applicant respectfully submits that it would not be obvious to a person having ordinary skill in the art to modify Bush to eliminate the external tubing. Bush appears to be intended for large-scale veterinary use, for example for inoculating or dosing a large number of animals in succession. This is evident from its very nature, and also from the suggestion that "the dispensing device of this invention may be in the form of a unit to be placed at a suitable location or to be suspended on the body of an operator" (Col. 4, lines 43-46),  
or that:

a back pack may be used in the dispensing kit, which has separate compartments, the one for containing the active ingredient, and the other for containing the diluent or the substance to be mixed with the active ingredient (Col. 5, lines 3-7).

A stationary device or a back pack device as described could not practically be used without an extendable part capable of being brought close to an animal being

treated. External tubing would be practically essential to permit such functionality. Even the alternative use in dispensing toxic materials as suggested in Bush would not be practical without a dispensing outlet that could be placed in proximity to the desired location. External tubing would again be practically essential to permit such functionality. A person having ordinary skill in the art would not consider eliminating the external tubing based on Bergner's self contained device.

Apart from the foregoing, however, Bush fails to meet the terms of claim 1 in at least the following *additional* respects:

(a) As recognized by the Examiner, Bush fails to disclose, teach, or suggest a port adapted to receive a plurality of containers for foam-forming chemicals such that when the containers are in the port, the containers move with movement of the casing (clearly evident in Fig. 1);

(b) Bush fails to disclose, teach, or suggest that the pump mechanism continuously induces flow of chemicals toward the mixing chamber when the motor operates. Instead, the motor shuts down after the required quantities of the fluent materials have been dispensed as a result of operation of various micro switches, as described, for example, at Col. 4, lines 20-33;

(c) Bush fails to disclose, teach, or suggest an actuator for a motor having a first state engagable by a user in which the motor operates and a second state during which the motor does not operate, and to which the actuator returns when released by the user;

To the extent that Bergner does suggest features that remedy these deficiencies, modifying Bush to incorporate such features would not be obvious to a person having ordinary skill in the art.

Consider first, point (a) above. Bush is intended for large-scale veterinary use, for example for inoculating a large number of animals in succession. This is evident from its very nature, and also from the teachings regarding stationary placement, or of a back pack configuration.

A person having ordinary skill in the art would recognize that containers of substantial size would be required, and would not consider it obvious to incorporate such containers in a hand-held unit.



Consider next, points (b) and (c) above. Bush dispenses a fixed quantity each time the device is operated. Bergner, on the other hand, allows the user to control the quantity delivered for each operation. To change Bush to provide continuous user-controlled operation as in Bergner would not only require major, if not complete reconstruction, but would completely destroy the functionality of the Bush device for its intended use. No person having ordinary skill in the art would consider such a change as obvious.

Since combining Bush and Bergner would neither be obvious to a person having ordinary skill in the art and in any event, would not the result meet the terms of claim 1, the rejection should be withdrawn.

Claims 1, 4, 8-12, 15, 20, 25, 41-43, 52 and 53:

These claims stand rejected as being unpatentable over Garbarino in view of Bergner. This rejection is moot as to canceled claims 4, 41, and 52. As to claim 1 and its dependent claims 8-12, 20, 25, 42, 43, and 53, Applicant respectfully traverses this rejection.

Garbarino is directed to a foam spraying device intended to be used, for example, for spraying the walls of mines to reduce the risk of explosions due to dust. As shown in Fig. 1, the Garbarino system includes a compressed air tank 12 that provides pressurized air to run a pair of hydraulic motors 20a and 20b. Additional tanks 14 and 16 contain the foam forming resin and catalyst. Conduits 32 and 34 provide pressurized air to the chemical tanks, and conduit 36 connects the air tank to a spray gun for helping to mix the chemicals. The chemical tanks are connected to spray gun 24 by conduits 46 and 48 from motors 20a and 20b, which do not pump the pressurized chemicals, but only provide metering.

As shown in Fig. 2, the Garbarino spraying system is designed to be carried on the user's back by means of a harness 56 including shoulder straps 57.

Control of operation is provided by valves 28 and 30 that connect the air supply to the rest of the system, check valves 38 and 40 that prevent backflow from tanks 14 and 16, and operating valves 50, 52, 54 located on the spray gun 24 that control flow of the chemicals and air to the mixing chamber. As explained at Col. 2, lines 29-32, the operator would open valves 28 and 30 before putting on harness 56, and open valves 50, 52, 54 to initiate operation.

As in the case of the rejection above based on Bush, the Examiner has recognized that Garbarino does not disclose a device in which the containers move with the casing of the spray gun, or that the device includes no external tubing, and seeks to remedy these deficiencies by modification to provide these features based on the teachings of Bergner.

Broadly stated, applicant respectfully submits that it would not be obvious to a person having ordinary skill in the art to modify Garbarino to eliminate the deficiencies noted by the Examiner or any of the others described below.

Specifically, Garbarino fails to meet the terms of claim 1 in at least the following respects:

(a) Garbarino does not have a hand-held casing that includes a port adapted to receive a plurality of containers for foam-forming chemicals such that when the containers are in the port, the containers move with movement of the casing (as recognized by the Examiner);

(b) Since Garbarino does not have a hand-held casing including a port for the containers, it necessarily fails to show a flow generator located *between the mixing chamber and the port*;

(c) Since Garbarino uses air pressure to induce flow of chemicals from the containers toward the mixing chamber, it fails to disclose a motor-operated flow generator of any kind;

(d) Since Garbarino shows hydraulic motors 20a and 20b, it fails to meet the recitation in claim 1 of an *electric motor*, and in any event, the motors do not operate the flow generator, but only provide flow metering;

(e) Garbarino does not suggest that the discharge nozzle and the mixing chamber are included in a single replaceable part; and

(f) Garbarino does not disclose a device that does not include external tubing (also recognized by the Examiner).

To the extent that Bergner suggests features that remedy these deficiencies, modifying Garbarino to incorporate such features would not be obvious to a person having ordinary skill in the art.



Consider for example, point (a) above. A person having ordinary skill in the art would recognize that to provide sufficient quantities of compressed air and the chemicals needed to spray foam on the walls of a mine, containers of substantial size would be required, and would not consider it obvious to incorporate such containers in a hand-held unit.

Consider next, point (d) above. Bergner uses *an electric motor* to operate gear pumps 15 and 16 that function as a flow generator. In contrast, Garbarino uses fluid pressure as the flow generator, and a hydraulic motor operated by the flow of chemicals to provide flow metering. This construction is used expressly to avoid the need for an electric motor, thereby avoiding the risk of a dust explosion due to an electric spark. It would not be obvious to a person having ordinary skill in the art to go against Garbarino's express teachings as to this.

Finally, as to point (f), as in the case of Bush, a back-mounted system as described in Garbarino could not practically be used without an extendable part capable of being brought close to a wall being sprayed. External tubing connecting the spray gun to the rest of the rest of the back pack mounted system would be practically essential to permit Garbarino's described functionality. Nor would there be any practical way to eliminate the external tubing emanating from tanks 12, 14, and 16. A person having ordinary skill in the art would not consider eliminating the external tubing, irrespective of Bergner.

Since combining the teachings of Garbarino and Bergner would not be obvious to a person having ordinary skill in the art and in any event, would not result in a device that meets the terms of claim 1, the rejection should be withdrawn.

Claims 5-7, 13, 14, 17-19, 21-23, 45-50, 54 and new claim 63:

These claims, all of which are directly or indirectly dependent on claim 1, have been rejected as obvious over Garbarino in view of Bergner, and further in view of other prior art. The rejection of claim 17 is moot in view of the cancellation of this claim. As to the other claims, the respective rejections are traversed. None of these other prior art discloses, teaches, or suggests remedies for the deficiencies in the Garbarino-Bergner combination. Accordingly, these claims are all allowable for the reasons detailed above in connection with claim 1.

New claims 55-62:

These claims focus on a stand-mounted version of the device of claim 1, and are allowable over the applied art for largely the same reasons as claim 1.

CONCLUSION:

In view of the foregoing, it is respectfully submitted that all of the rejections have been overcome, and that the application is in condition for allowance. Early notice thereof is respectfully solicited.

Respectfully submitted,

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Enclosures:

- Petition for Extension (One Month)
- Request for Continued Examination (RCE)